



The brand new GDS-1000B Series digital storage oscilloscopes equip with 100MHz, 70MHz and 50MHz bandwidth, 2 or 4 analog input channels (50MHz, 4 channels input only) that provide entry level users with diversified selections. The maximum real time sampling rate can be up to 1GSa/s. The robust functional performance makes the economical oscilloscope more colorful and allows entry level users to sumptuously enjoy the fun and value brought by test and measurement which is precisely the emerging mission of the test and measurement industry that GW Instek works relentlessly to achieve.

10M memory depth for each channel yields exquisite measurement results and allows each retrieved waveform to successfully reveal the details of signal. Engineers are often baffled by failing to retrieve signal details when measuring basic electric circuit signals. Now, GDS-1000B series oscilloscopes, with 10M memory depth for each channel, are capable to uncover all signal details.

7" 800 x 480 WVGA LCD display and the 256 color gradient display function together allow the GDS-1000B Series to distinctly display waveform details in gradients while measuring fast changing analog signals. Additionally, 50,000wfms/s waveform update rate helps engineers clearly understand the gradients of signal variations and easily identify the problem of transient signal variations.

1Mpts FFT signal display makes the frequency domain display function more delicate. Engineers can clearly observe the distributed details of frequency domain signals. Smooth and rapid response can even better locate where the problems are originated. Powerful FFT function realizes high efficient spectrum analysis measurement which is indispensable for technology and education arenas.

The GDS-1000B Series oscilloscopes provide the zero key function for vertical voltage scale adjustment, horizontal time scale adjustment and trigger level adjustment. When processing complicate waveform adjustment and observation, engineers often require the zero key function to start a new measurement, adjust waveform or reset trigger level. The zero key function can reduce time in turning control knobs that is a great benefit for engineers.

## GDS-1000B Series

### FEATURES

- 100/70/50MHz Bandwidth Selections, 2ch or 4ch Input
- 1GSa/s Maximum Sampling Rate
- 10M Maximum Memory Depth For Each Channel
- 7" 800 x 480 WVGA LCD Display
- 256 Color Gradient Display Function to Strengthen Waveform Performance
- 1Mpts FFT Frequency Domain Signal Display
- Zero Key Function For Horizontal Time, Vertical Voltage and Triggering
- Compact And Innovative Exterior Design



Front



Rear Panel

### APPLICATIONS

- Educational Market - General Purpose Instruction
- Industrial Sector - Fundamental R&D Measurement Applications

## SPECIFICATIONS

|                         |                                 | GDS-1054B                                                                                                                                                                                                                                                                                         | GDS-1072B      | GDS-1074B      | GDS-1102B       | GDS-1104B       |
|-------------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|-----------------|-----------------|
| VERTICAL                | Channels                        | 4                                                                                                                                                                                                                                                                                                 | 2 + Ext        | 4              | 2 + Ext         | 4               |
|                         | Bandwidth                       | DC~50MHz(-3dB)                                                                                                                                                                                                                                                                                    | DC~70MHz(-3dB) | DC~70MHz(-3dB) | DC~100MHz(-3dB) | DC~100MHz(-3dB) |
| TRIGGER                 | Rise Time                       | 5ns                                                                                                                                                                                                                                                                                               | 5ns            | 5ns            | 3.5ns           | 3.5ns           |
|                         | Bandwidth Limit                 | 20MHz                                                                                                                                                                                                                                                                                             | 20MHz          | 20MHz          | 20MHz           | 20MHz           |
|                         | Vertical Sensitivity Resolution | 8 bit : 1mV~10V/div                                                                                                                                                                                                                                                                               |                |                |                 |                 |
|                         | Input Coupling                  | AC, DC, GND                                                                                                                                                                                                                                                                                       |                |                |                 |                 |
|                         | Input Impedance                 | 1MΩ // 16pF approx.                                                                                                                                                                                                                                                                               |                |                |                 |                 |
|                         | DC Gain Accuracy*               | ±3%                                                                                                                                                                                                                                                                                               |                |                |                 |                 |
|                         | Polarity                        | Normal & Invert                                                                                                                                                                                                                                                                                   |                |                |                 |                 |
|                         | Maximum Input Voltage           | 300Vpk, CAT I (300Vpk CAT II with GTP-070A- 4/100A-4 10:1 probe)                                                                                                                                                                                                                                  |                |                |                 |                 |
|                         | Offset Position Range           | 1mV/div : ±1.25V ; 2mV/div ~ 100mV/div : ±2.5V ; 200mV/div ~ 10V/div : ±125V                                                                                                                                                                                                                      |                |                |                 |                 |
|                         | Waveform Signal Process         | +, -, ×, ÷, FFT, FFTrms, User Defined Expression ; FFT: Spectral magnitude. Set FFT Vertical Scale to Linear RMS or dBV RMS ; FFT Window Display : Rectangular, Hamming, Hanning, or Blackman-Harris                                                                                              |                |                |                 |                 |
| EXTERNAL TRIGGER        | Source                          | CH1, CH2, CH3*, CH4*, Line, EXT** ; *four channel models only ; **two channel models only                                                                                                                                                                                                         |                |                |                 |                 |
|                         | Trigger Mode                    | Auto (supports Roll Mode for 100 ms/div and slower), Normal, Single Sequence                                                                                                                                                                                                                      |                |                |                 |                 |
| HORIZONTAL              | Trigger Type                    | Edge, Pulse Width, Video, Pulse Runt, Rise & Fall, Timeout, Alternate, Event-Delay(1~65535 events), Time-Delay (Duration, 4nS~10S), Bus                                                                                                                                                           |                |                |                 |                 |
|                         | Holdoff range                   | 4ns to 10s                                                                                                                                                                                                                                                                                        |                |                |                 |                 |
| X-Y MODE                | Coupling                        | AC, DC, LF rej., Hf rej., Noise rej.                                                                                                                                                                                                                                                              |                |                |                 |                 |
|                         | Sensitivity                     | 1div                                                                                                                                                                                                                                                                                              |                |                |                 |                 |
| CURSORS AND MEASUREMENT | Range                           | ±15V                                                                                                                                                                                                                                                                                              |                |                |                 |                 |
|                         | Sensitivity                     | DC ~ 100MHz Approx. 100mV ; 100MHz ~ 200MHz Approx. 150mV                                                                                                                                                                                                                                         |                |                |                 |                 |
| CONTROL PANEL FUNCTION  | Input Impedance                 | 1MΩ ±3%~16pF                                                                                                                                                                                                                                                                                      |                |                |                 |                 |
|                         | Time base Range                 | 5ns/div ~ 100s/div (1-2-5 increments)                                                                                                                                                                                                                                                             |                |                |                 |                 |
|                         | ROLL                            | 100ms/div ~ 100s/div                                                                                                                                                                                                                                                                              |                |                |                 |                 |
|                         | Pre-trigger                     | 10 div maximum                                                                                                                                                                                                                                                                                    |                |                |                 |                 |
|                         | Post-trigger                    | 2,000,000 div maximum                                                                                                                                                                                                                                                                             |                |                |                 |                 |
|                         | Timebase Accuracy               | ±50 ppm over any ≥1 ms time interval                                                                                                                                                                                                                                                              |                |                |                 |                 |
|                         | Real Time Sample Rate           | 1GSa/s max.                                                                                                                                                                                                                                                                                       |                |                |                 |                 |
|                         | Record Length                   | Max. 10Mpts                                                                                                                                                                                                                                                                                       |                |                |                 |                 |
|                         | Acquisition Mode                | Normal, Average, Peak Detect, Single                                                                                                                                                                                                                                                              |                |                |                 |                 |
|                         | Peak Detection                  | 2nS (typical)                                                                                                                                                                                                                                                                                     |                |                |                 |                 |
| DISPLAY                 | Average                         | selectable from 2 to 256                                                                                                                                                                                                                                                                          |                |                |                 |                 |
|                         | X-Axis Input                    | Channel 1; Channel 3*(*four channel models only)                                                                                                                                                                                                                                                  |                |                |                 |                 |
| CURSORS AND MEASUREMENT | Y-Axis Input                    | Channel 2; Channel 4*(*four channel models only)                                                                                                                                                                                                                                                  |                |                |                 |                 |
|                         | Phase Shift                     | ±3° at 100kHz                                                                                                                                                                                                                                                                                     |                |                |                 |                 |
| CONTROL PANEL FUNCTION  | Cursors                         | Amplitude, Time, Gating available; Unit : Seconds(s), Hz(1/s), Phase(degree), Ration(%)                                                                                                                                                                                                           |                |                |                 |                 |
|                         | Automatic Measurement           | 36 sets: Pk-Pk, Max, Min, Amplitude, High, Low, Mean, Cycle Mean, RMS, Cycle RMS, Area, Cycle Area, ROVShoot, FOVShoot, RPREShoot, FPRESShoot, Frequency, Period, RiseTime, FallTime, +Width, -Width, Duty Cycle, +Pulses, -Pulses, +Edges, -Edges, FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF, Phase |                |                |                 |                 |
| DISPLAY                 | Cursors Measurement             | Voltage difference between cursors (ΔV) Time ; difference between cursors (ΔT)                                                                                                                                                                                                                    |                |                |                 |                 |
|                         | Auto Counter                    | 6 digits, range from 2Hz minimum to the rated bandwidth                                                                                                                                                                                                                                           |                |                |                 |                 |
| INTERFACE               | Autoset                         | Single-button, automatic setup of all channels for vertical, horizontal and trigger systems, with undo Autoset                                                                                                                                                                                    |                |                |                 |                 |
|                         | Save Setup                      | 20set                                                                                                                                                                                                                                                                                             |                |                |                 |                 |
| POWER SOURCE            | Save Waveform                   | 24set                                                                                                                                                                                                                                                                                             |                |                |                 |                 |
|                         | TFT LCD Type                    | 7" TFT WVGA color display                                                                                                                                                                                                                                                                         |                |                |                 |                 |
| MISCELLANEOUS           | Display Resolution              | 800 horizontal x 480 vertical pixels (WVGA)                                                                                                                                                                                                                                                       |                |                |                 |                 |
|                         | Interpolation                   | Sin(x)/x                                                                                                                                                                                                                                                                                          |                |                |                 |                 |
| DIMENSIONS & WEIGHT     | Waveform Display                | Dots, vectors, variable persistence (16ms~4s), infinite persistence                                                                                                                                                                                                                               |                |                |                 |                 |
|                         | Waveform Update Rate            | 50,000 waveforms per second, maximum                                                                                                                                                                                                                                                              |                |                |                 |                 |
| ACCESSORIES             | Display Graticule               | 8 x 10 divisions                                                                                                                                                                                                                                                                                  |                |                |                 |                 |
|                         | Display Mode                    | YT, XY                                                                                                                                                                                                                                                                                            |                |                |                 |                 |
| POWER SOURCE            | USB Port                        | USB 2.0 High-speed host port x1, USB High-speed 2.0 device port x1                                                                                                                                                                                                                                |                |                |                 |                 |
|                         | Ethernet Port(LAN)              | RJ-45 connector, 10/100Mbps with HP Auto-MDIX (Only for the GDS-1074B, GDS-1104B.)                                                                                                                                                                                                                |                |                |                 |                 |
| MISCELLANEOUS           | Go-NoGo BNC                     | 5V Max/10mA TTL open collector output                                                                                                                                                                                                                                                             |                |                |                 |                 |
|                         | Kensington Style Lock           | Rear-panel security slot connects to standard kensington-style lock                                                                                                                                                                                                                               |                |                |                 |                 |
| MISCELLANEOUS           | Multi-Language Menu             | Available                                                                                                                                                                                                                                                                                         |                |                |                 |                 |
|                         | Operation Environment           | Temperature : 0°C ~ 50°C. Relative Humidity ≤80% at 40°C or below; ≤ 45% at 41°C ~ 50°C                                                                                                                                                                                                           |                |                |                 |                 |
| DIMENSIONS & WEIGHT     | Online Help                     | Available                                                                                                                                                                                                                                                                                         |                |                |                 |                 |
|                         |                                 | 380(W) x 208 (H) x 127.3(D)mm, Approx. 2.8kg                                                                                                                                                                                                                                                      |                |                |                 |                 |

The specifications apply when the GDS-1000B is powered on for at least 30 minutes under +20°C~+30°C.

Specifications subject to change without notice. DS-1000BGD1DH

### ORDERING INFORMATION

|                  |                                                  |
|------------------|--------------------------------------------------|
| <b>GDS-1104B</b> | 100MHz, 4 channels, Digital Storage Oscilloscope |
| <b>GDS-1102B</b> | 100MHz, 2 channels, Digital Storage Oscilloscope |
| <b>GDS-1074B</b> | 70MHz, 4 channels, Digital Storage Oscilloscope  |
| <b>GDS-1072B</b> | 70MHz, 2 channels, Digital Storage Oscilloscope  |
| <b>GDS-1054B</b> | 50MHz, 2 channels, Digital Storage Oscilloscope  |

### ACCESSORIES

|                               |                                                                   |
|-------------------------------|-------------------------------------------------------------------|
| User manual x1, Power cord x1 |                                                                   |
| <b>GTP-100A-4</b>             | 100MHz Passive Probe. Suitable for GDS-1104B, GDS-1102B           |
| <b>GTP-070A-4</b>             | 70MHz Passive Probe. Suitable for GDS-1074B, GDS-1072B, GDS-1054B |

### OPTIONAL ASSESSORIES

|                |                                                           |
|----------------|-----------------------------------------------------------|
| <b>GTC-001</b> | Instrument cart, 470(W)x430(D)mm (U.S. type input socket) |
| <b>GTC-002</b> | Instrument cart, 330(W)x430(D)mm (U.S. type input socket) |
| <b>GDB-03</b>  | Demo Board                                                |
| <b>GTL-110</b> | Test lead, BNC to BNC heads                               |
| <b>GTL-242</b> | USB cable, USB2.0 A-B type cable 4P                       |

### FREE DOWNLOAD

|                 |                             |
|-----------------|-----------------------------|
| <b>Software</b> | OpenWave Software           |
| <b>Driver</b>   | USB Driver ; LabView Driver |

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